GOVERNMENT OF INDIA
PETROLEUM AND NATURAL GAS
LOK SABHA

STARRED QUESTION NO:280
ANSWERED ON:15.03.2001
TATA ENERGY RESEARCH INSTITUTE
SURESH RAMRAO JADHAV (PATIL)

Will the Minister of PETROLEUM AND NATURAL GAS be pleased to state:

(a) whether the Government have taken note of the recent research conducted at the Tata Energy Research Institute, New Delhi regarding isolation of consortium of bacteria which eat up petroleum sludge, a toxic waste product;

(b) if so, the details thereof; and

(c) the steps taken/proposed to be taken to provide this technology to all the refineries in the country as soon as possible in order to save the huge cost of pits and also to prevent the toxic waste leaking into ground water?

Answer

MINISTER OF PETROLEUM & NATURAL GAS (SHRI RAM NAIK)

(a) to (c): A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) OF LOK SABHA STARRED QUESTION NO. 280 FOR MARCH, 2001 REGARDING TATA ENERGY RESEARCH INSTITUTE.

(a) to (c): At present , in the refineries, oil is recovered from the sludge generally using centrifuges and melting pits. The sludge after recovery of oil is stored in lined disposal pits after which it is disposed off. Regular ground water monitoring is being carried out around the disposal sites and no contamination of ground water has been reported. The oil industry is aware of the technology developed by Tata Energy Research Institute, New Delhi (TERI)This technology considers development of an oil sludge degrading bacterial group of compounds which will convert the oil sludge to non-toxic compounds. Oil industry has joined hands with TERI to further develop this technology and complete the trials being conducted in various refineries for adoption of this technology.

NOTE FOR SUPPLEMENTARIES TO LOK SABHA STARRED QUESTION NO.280 FOR 15.3.2001 REGARDING TATA EN RESEARCH INSTITUTE

Oily sludge is generated in oil refineries during storage and handling of Crude Oil and petroleum products.This is generated mainly in process units, crude oil and product tanks and Effluent Treatment Plant. Oily sludge is a hazardous waste and the oil refineries need to take utmost care for handling land storage of the same.
Presently oil refineries reduce the generation of oil sludge by:-

(i) using side entry mixers in tanks

(ii) Circulation of hot gas oil in tanks before M&I

(iii) Recovery of oil from sludge in melting pit etc.

The residual oily sludge is stored in a secured place inside the refinery. However, some of the refineries sell it to the vendors authorised by the Govt.

There is process called bio-remediation, which involves use of Bacteria for degradation of hazardous waste. This is in use in different countries in the world like U.S.A., U.K. Germany and other European countriesIn India, Tata Energy Research Institute (TERI) has developed a specialised bacterial consortium which degrades oily sludge. The bacteria is produced in the bio-reactor in laboratory and are mixed with specific carrier material and packed in bags for easy transportation. TERI has named this as `Oilzapper`.

Experimental trial was successfully conducted by TERI at Mathura refinery.Similar trials were conducted at Barauni, Guwahati and Digboi refineries, which were also successful. Trial at Digboi is still in progress.

IOCL and TERI have entered into a Memorandum of Collaboration for scaling up this technology.Studies are being carried out jointly by IOCL and TERI for producing bacterial consortium produced in scaled up 1000 litre bio-reactors.Trial has begun at Mathura refinery on 30.1.2001 to validate the application rates and efficacy of treatment of oily sludge with the bacterial consortium produced in scaled up reactors. On successful outcome of the trial, this technology may be considered for adoption.